

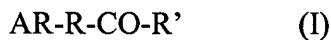
LISTING OF THE CLAIMS:

Claim 1(Amended) An aqueous solution for electroplating tin-zinc alloys comprising the following components:

- a) Zn(II) ions;
- b) Sn(II) ions;
- c) aliphatic carboxylic acids and/or alkali salts thereof;
- d) anionic surfactants; and
- e) non-ionic surfactants.

Claim 2 (Original) A solution according to claim 1 which additionally comprises aromatic aldehydes and/or aromatic ketones.

Claim 3 (Original) A solution according to claim 2 wherein the aromatic aldehydes, and/or aromatic ketones have the formula (I)



wherein AR = phenyl, naphthyl; R = CH₂, CH=CH; and R' = H, C₁₋₃ alkyl.

Claim 4 (Original) A solution according to claim 2, characterised in that the aromatic aldehydes have the formula (II)



wherein X = H, CH₃, OCH₃, Cl, Br.

Claim 5 (Original) A solution according to claim 1, wherein the solution has a pH value of 2 – 8.

Claim 6 (Original) A solution according to claim 5, wherein the solution has a pH value of 3 - 5.

Claim 7 (Original) A solution according to claim 1, wherein the Sn(II) and Zn(II) ions are contained as chlorides, sulfates or alkyl sulfonates and, optionally, conducting salts of pertinent anions are also contained.

Claim 8 (Original) A solution according to claim 1, wherein the aliphatic carboxylic acids are hydroxy carboxylic acids and/or amino carboxylic acids or salts thereof.

Claim 9 (Original) A solution according to claim 8, wherein the carboxylic acids are citric acid or alkali salts thereof.

Claim 10 (Original) A solution according to claim 1, wherein the non-ionic surfactants have the formula (III)

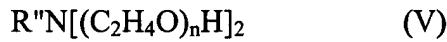


wherein R represents an alkyl, aryl, alkylaryl radical and n = 1 – 100.

Claim 11 (Original) A solution according to claim 10, which additionally comprises non-ionic surfactants of the formula (IV)



and/or of the formula (V)



wherein $R' = C_{1-3}$ alkyl or $-(C_2H_4)_nH$; $R'' = C_{5-20}$ alkyl and $n = 1 - 100$.

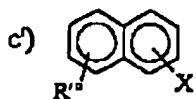
Claim 12 (Original) A solution according to claim 1, wherein the anionic surfactants include one or more of the compounds of the formulae (VI) to (IX)



wherein $R = C_{3-12}$ alkyl; $X = H, -SO_3M$; $M = Na, K, NH_4$



wherein $R' = C_{3-12}$ alkyl; $R'' = C_{2-5}$ alkyl, $M = Na, K, NH_4$

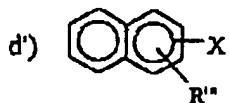


(VIII)

wherein R''' = H, C₁₋₅ alkyl, O-(C₂H₄O)_n-X; or

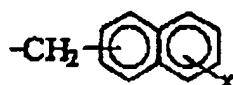


and X = SO₃M with M = Na, K, NH₄



(IX)

wherein R''' = H, C₁₋₅ alkyl, O-(C₂H₄O)_n-X; or



and X = SO₃M with M = Na, K, NH₄

with n = 0 – 100, preferably 6 – 15

Claim 13 (Original) A solution according to claim 1, which additionally comprises aromatic and/or heterocyclic carboxylic acids or alkali salts thereof.

Claim 14 (Original) A solution according to claim 13, wherein the carboxylic acids have the formula (XIV)

R-COOM

(XIV)



wherein R =

and M = H, Na, K, NH₄